Case Study
Models for a Regenerative Economy:
Natural Environment Impacts in the Southeast

Green Infrastructure through Tree Lawn Ordinance, Savannah, Georgia (2017-Present)   Prepared by Bailey Shea, Program Coordinator for Policy

Overview[1,2]

Population: 144,464[3]

GDP, 2019 Metropolitan Statistical Area (MSA): $22,775,330[4]

Median Income, 2019: $41,098

International Energy Conservation Code (IECC) climate region: 2A, Hot-Humid[5]

Description of project: The City of Savannah has encouraged green infrastructure through a "tree lawn" requirement for some commercial developments. This helps to mitigate flooding among other negative impacts caused, in part, by the built environment and will strengthen the regenerative nature of the natural urban environment.

Apprentices in Savannah's green infrastructure workforce program in front of one of the urban tree nursies. Courtesy of Nick Deffley, Sustainability Director, City of Savannah Office of Sustainability

Connection to the Built Environment

- In 2017, the City of Savannah, Georgia, added an amendment to its Landscape and Tree Protection Ordinance that requires "tree lawns" to be constructed whenever non-residential and multifamily buildings are developed, rehabilitated or improved "wherever they existed historically or exist in the current nearby context."[6] This puts a requirement on the built environment to improve the natural environment, which, in turn, protects it from the warming impacts of solar heat on building exteriors and windows, as well as from excessive flooding caused by the impervious surfaces that can surround the building. Incorporating tree lawns into commercial development to mitigate the potential negative impacts of the built environment is one example of regenerative design thinking.

Connection to the Natural Environment

- The policy sets the stage for the planting of thousands of new trees across the city, which faces increasing flooding and other climate resilience challenges. In addition to mitigate the urban heat island effect, trees planted around buildings provide shade that prevents solar heat from warming building interiors, reducing air conditioning costs. This approach of using the natural environment to reduce energy use from the built environment is an example of successful regenerative design. Trees provide valuable shade, mitigate the urban heat island effect and even sequester carbon. These regenerative properties are just a few of the benefits a policy like this one brings to commercial districts in Savannah.

[1] https://www.savannahnow.com/news/20180726/tree-lawns-keeping-savannah-green

[2] https://www.savannahnow.com/news/20190213/savannah-project-grows-trees-and-workforce

[3] https://www.census.gov/quickfacts/savannahcitygeorgia

[4] https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=30&isuri=1&major_area=5&area=42340&year=2019&tab leid=501&category=2501&area_type=5&year_end=-1&classification=naics&state=5 &statistic=1&yearbegin=-1&unit_of_measure=levels

[5] https://www.energy.gov/sites/prod/files/2015/10/f27/ba_climate_region_guide_7.3.pdf

[6] City of Savannah, Georgia Code of Ordinances. Division II, Part 8, Chapter 12, Sec. 8-12008.

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Some of the 550 specifies of trees being grown to mitigate urban heat island effect and provide shade to buildings in Savannah.
Courtesy of Nick Deffley, Sustainability Director, City of Savannah Office of Sustainability

- By enhancing the natural environment with native trees and plant life rather than attempting to solve flooding issues through "grey infrastructure"—digging into the land and constructing concrete and steel systems—these efforts in Savannah are utilizing regenerative design practices to support natural systems in the urban environment and ultimately reducing the adverse impacts of climate change.

- Tree lawns are a form of green infrastructure. By providing soil and vegetation to absorb runoff and by absorbing significant water through root structures themselves, trees lawns reduce the need for grey drainage infrastructure. Drainage infrastructure to reduce flooding may typically require digging into the local landscape to install pipes connecting to the existing stormwater or stormsewer systems; this traditional approach foregoes regenerative design, which would maximize contributions of the natural environment and likely be less costly for the city to implement.

Connection to the Social Environment

- In 2019, with funding from the Southeast Sustainability Directors' Network, Savannah implemented a paid workforce program for unemployed or under-employed residents to be trained in landscaping practices, achieve a key landscaping certification, and be on their way to future job opportunities. The program built three urban tree nurseries on blighted city property and is currently raising over 550 native tree species that are freshwater and saltwater tolerant. In two to three years, these trees will be permanently planted in low-lying flood prone areas, on both public and private property throughout the community. Apprentices in the Savannah green infrastructure workforce program are paid $13/hour—a living wage for an adult in Savannah with no children—and the first cohort ranged in age from 18 to 55 years old. Apprentices learn curriculum for the Georgia Certified Landscape Professional (GCLP) exam in the classroom, are taught soft skills, and work hands-on by planting trees and installing drip irrigation systems. A regenerative economy is one that gives back to the natural, built and social environments; by utilizing the labor of the apprentice participants while setting them up for successful, gainful employment that otherwise would not be available, this program contributes to the vision of a regenerative economy at a small but meaningful level.

- Adding trees to urban environments has additional social benefits when considering the positive impacts of increased visibility and access to nature. While trees in a commercial development district may seem like a small feature of "nature," it's important to remember the concept that drives biophilic philosophy in the design community—that people have an inherent connection to nature and that this connection drives numerous positive impacts on the social environment that benefits from it.